
LD 01: Template audit

Templates are used to store data which is common to many telephones. This includes items such as key functions and Class of Service. The Template Audit program saves protected memory by eliminating unused or duplicate telephone templates.

LD 1 also performs the following consistency checks.

User Count Scan

All telephones in the system are scanned to find the total number of users for a template.

If a template is found to have no users, the entire template is removed with the warning message 'NO USERS FOUND'. If a template is found to have an incorrect user count, the correct user count is written to the template, and the warning message 'USER COUNT LOW' or 'USER COUNT HIGH' is output. If the user count is accurate, the message 'USER COUNT OK' is output.

Duplicate Template Scan

Each template is checked against every other template for possible duplication. A template is considered a duplicate of another if all of the following conditions are met:

- the checksums are the same
- the template lengths and the hunt offsets are the same
- all template entries are the same

If a match is found, the warning message 'DUPLICATE OF xxxx' is output. A scan is then initiated to locate all users of the current template and move them to the matched template.

For each of these users found, the template number in the telephone data block and the user count is updated. After all of the users of the current template are moved to the matched template, the current template is removed.

Template Checksum Audit

A checksum is a binary sum of the template length, hunt offset, and template entries. The checksum is calculated for each template and compared with the existing template checksum. If the existing checksum is correct, the message 'CHECKSUM OK' is output. Otherwise, the checksum is corrected with the warning message 'CHECKSUM WRONG'.

Key Lamp Strip Audit

Two checks are made to correct Key Lamp Strip (KLS) corruption. First, the template length is compared to the number of KLS indicated in the protected line block. The second check verifies that the last word of the template reflects a 'NULL' key.

If these checks detect any discrepancies, they are corrected with the warning message 'CORRUPTED KLS'.

These corrections alter the checksum of the template. This is identified and corrected by the checksum audit.

Operating parameters

Due to the Real Time impact of this program and the large amount of data being scanned, the template audit should be run during low traffic hours.

The template audit should not be aborted unless it is critically necessary. If it does become necessary to interrupt execution of the audit, be aware that the templates may be corrupted.

If a system initialization occurs during the template audit, the program is automatically aborted. It should be restarted as soon as possible after this occurs.

The audit printout only appears on the TTY that requested the template audit program run.

Template Audit cannot be run as a background task.

To confirm that extraneous templates have been removed and that all counts have been corrected to their proper value, re-run the audit program.

A datadump (LD 43) should be run after a template audit is executed.

Sample operation

The audit begins when the program (LD 1) is loaded. All templates are scanned in the following sequence, beginning with template one:

- 1 Single line telephones
- 2 Multi-line telephones

Following is an example of the system information which is generated during a Template Audit:

```
TEMPLATE AUDIT
STARTING PBX TEMPLATE SCAN
TEMPLATE 0001 USER COUNT LOW    CHECKSUM OK
TEMPLATE 0002 USER COUNT HIGH   CHECKSUM OK
TEMPLATE 0003 NO USERS FOUND
      .
      .
      .
STARTING SLI TEMPLATE SCAN
TEMPLATE 0001 USER COUNT OK     CHECKSUM OK
      .
      .
      .
TEMPLATE 0067 USER COUNT OK     CHECKSUM WRONG
TEMPLATE 0068 USER COUNT OK     CHECKSUM OK DUPLICATE
OF 0014
      .
TEMPLATE 0082 USER COUNT OK     CHECKSUM OK
      .
TEMPLATE 0120 USER COUNT OK
TEMPLATE AUDIT COMPLETE
```

Note: The report does not print out that template inconsistencies have been corrected.
